

# West Virginia - 2003

## Forest Health Highlights



### The Resource

The West Virginia landscape is dominated by more than 11.8 million acres of forest. Due in large part to its varied topography, the forests are a rich diversity of oaks, hickories, spruce, pines, and the State tree - sugar maple. Ninety percent of all forests in the State are privately owned, but there are 9 State forests, 36 State parks, and 56 wildlife management areas that provide public enjoyment.

### Forest Stewardship

The Forest Stewardship Program philosophy ensures that private landowners apply environmental and economic resource management principles to benefit themselves, future landowners, and the public. The focal point of the Forest Stewardship Program is the development of a long-term management plan for each woodland owner who is willing to participate. In West Virginia, the Forest Stewardship Program includes having a forest management plan written by a professional forester, as well as financial assistance for reforestation, forest improvement, soil and water protection, wetlands protection, fisheries habitat enhancement, wildlife habitat enhancement, and forest recreation enhancement. There have been 3,719 forest stewardship plans developed covering over 644,105 acres in West Virginia as of December 31, 2003.

### Special Issues

**Gypsy Moth** – West Virginia Department of Agriculture (WVDA) field agents surveyed a total of 431,624 acres of State and private land during the fall of 2002 to determine areas at risk for potential gypsy moth defoliation in the spring of 2003. Out of this figure, a total of 6,199 acres had populations high enough to recommend treatment intervention during the spring of 2003. However, landowners/land managers ended up only paying for 4,270 acres to be treated. On Federal lands in West Virginia, a total of 4,283 acres were treated; 4,236 of these acres were treated on the Monongahela National Forest and 47 acres were treated on the George Washington/Jefferson National Forest.

Due to the wet spring and summer, the presence of the gypsy moth fungus was more evident during late May and June of 2003 than in 2002 and the decline in gypsy moth populations continued. Defoliation fell to 13,923 acres — 5,338 acres on State and private land and 8,585 acres on Federal land. However, egg mass surveys conducted in the fall of 2003 revealed isolated areas with large egg masses. This suggests that populations could rapidly rebound if favorable conditions exist in 2004.

**STS Mating Disruption (Pheromone Flakes)** – A total of 114,225 acres of Federal, State, and private land in West Virginia were treated with pheromone flakes for low-level gypsy moth infestations under the STS Program. The treated land occurred in four blocks in McDowell, Mercer, Raleigh, Summers, and Wyoming Counties. In addition, treatments were completed on a 2,681-acre Mercer County block on East River Mountain that was part of a larger block in Virginia.

**Beech Bark Disease (BBD)** – In 1981, beech scale, the insect component of the beech bark disease complex, was found infesting beech timber on more than 70,000 acres of forest land. By 1998, the scale insect infested beech trees over an area encompassing 1,352,807 acres in Grant, Barbour, Randolph, Tucker, Pocahontas, Upshur, and Pendleton Counties. The beech bark disease-killing front encompassed 914,972 acres of forest land in all but Barbour and Grant Counties. The 2003 survey found scale infested beech over an area encompassing 3,279,217 acres in parts of 14 counties while the killing front was detected over an area encompassing 1,317,123 acres in portions of seven counties. In 5 years, beech scale has spread into seven new counties, including: Greenbrier, Hampshire, Hardy, Mineral, Nicholas, Preston, and Webster. Mortality has now been found in Webster County. Currently, there are no efforts underway to attempt control of beech bark disease.

**Sudden Oak Death (SOD)** – A newly described disease, Sudden Oak Death (SOD), caused by the pathogen, *Phytophthora ramorum*, is currently killing thousands of oak trees in California and southwestern Oregon. At the moment, three species of native California oaks (*Quercus* spp.), and a close relative of oaks, tanoak (*Lithocarpus densiflorus*), can be killed by the disease. There are two categories of hosts for *P. ramorum*: bark canker hosts (oaks and tanoaks), which become infected on the trunks, and foliar hosts (i.e., rhododendrons, bigleaf maples, and azaleas).

Host species and symptoms in West Virginia that were examined included mountain laurel leaves and twigs, rhododendron leaves and twigs, and bleeding stem cankers on oaks. The WVDA Pest Identification Lab performed PCR diagnostics on samples. Duplicate samples representing one-half of the transects per plot location were shipped overnight to Mississippi State University to their PCR diagnostic lab for back-up screening. Further surveying for SOD will continue this fall. Both PCR labs were able to confirm that no sudden oak death was present in the samples screened.

**Emerald Ash Borer (EAB)** - A USDA-APHIS-PPQ cooperative agreement enabled the WVDA to conduct a detection survey for emerald ash borer (EAB), *Agrilus planipennis*, in 2003. The following counties were surveyed: Berkeley, Boone, Brooke, Cabell, Doddridge, Gilmer, Hampshire, Hancock, Jackson, Jefferson, Kanawha, Lincoln, Marshall, Mason, Mineral, Morgan, Ohio, Pleasants, Preston, Putnam, Randolph, Ritchie, Roane, Tyler, Upshur, Wayne, Wetzel, Wirt, and Wood. The objective of the survey was to determine the presence of EAB within West Virginia. There were no EAB-infested trees found during the course of this survey.

**Hemlock Woolly Adelgid (HWA)** - HWA was detected for the first time in Webster County. Releases of 2,500 *Pseudotsuga tsugae* each were made at Summersville Dam, Pipestem State Park, Bluestone State Park, and Hawks Nest State Park. Two releases of 300 *Laricobius nigrinus* beetles were made at Beaver Creek Campground and Seneca State Forest in November 2003.

**Oak Wilt Survey** - Aerial oak wilt surveys were conducted over Ohio, Brooke, Tucker, and Webster Counties, the four historically oak wilt-free counties. Additionally, aerial surveys were conducted over four high disease incidence quadrangles in the Eastern Panhandle. During 2002, 20 oak wilt disease centers were observed in the four high disease incidence quadrangles. Of the 20 disease centers, 17 were located in Grant County and 3 were located in Hardy County. During 2003, 20 oak wilt disease mortality centers were observed in the four high disease incidence quadrangles and all were located in Grant County. No disease centers were observed in the four traditionally oak-wilt free counties.

## Forest Fires

The State of West Virginia has experienced one of the wettest years in its history. As a result, the devastation from forest fires was kept to a minimum. For the year 2003, there were 634 wildfires. These fires consumed nearly 8,580 acres. This resulted in

estimated damages to the timber resource of \$2,545,900.00. The cost to suppress these wildfires was in excess of \$200,000. Arson and debris burning are still the leading causes of wildland fires in West Virginia.

## Weather

**Ice Damage** - Ice storms caused widespread damage in several counties during November 2002 and early 2003. In 2002, an early winter ice storm that caused limb breakage and trunk snap in the Eastern Panhandle resulted in extensive damage because the storm occurred before the trees had shed all of their leaves. Ice damage was reported in areas with elevations higher than 2,000 feet along the Allegheny Front in Grant, Hampshire, Hardy, Mineral, and Pendleton Counties. The February 2003 ice storm occurred primarily in Calhoun, Jackson, Mason, upper Putnam, lower Ritchie, Roane, and Wirt Counties. Because of the extensive damage (everything from broken branches, trunk snap, and uprooted trees), the area was flown and 306,632 acres of damage were mapped. Hardwood species such as yellow poplar, black locust and black cherry were particularly susceptible to limb breakage. Pines were uprooted, had broken branches, or had their trunks snapped. For over a week, downed trees made roads impassable and knocked out power for thousands.

## Forest Health Monitoring

Since 1995, the West Virginia Division of Forestry has maintained a permanent network of 162 plots to monitor forest health conditions across the State. In 2002, the USDA Forest Service merged the Forest Health Monitoring Program with the Forest Inventory and Analysis Program. Plot information, such as soil, lichens, tree damage, and crown density, is still being collected. USDA Forest Service employees now conduct the collection, once done by the West Virginia Division of Forestry's personnel.

## Laboratory Diagnostics

A PCR lab was established in the WVDA Plant Industries Division pathology laboratory. This is now available to help facilitate identification of non-native pathogens using DNA sequence analysis. In conjunction with the use of PCR, classical morphology techniques will be employed to confirm sequence results. DNA sequences will be queried using the GenBank database, which contains DNA sequences of other fungi, and will allow a percent-match comparison. This diagnostic tool will provide rapid and accurate detection and identification of non-native pathogens.

## For More Information



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